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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,739	01/12/2001	David R. Pehlke	8194-443	9747

20792 7590 04/15/2004

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EXAMINER

NGUYEN, SIMON

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 04/15/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,739

Applicant(s)

PEHLKE ET AL.

Examiner

SIMON D NGUYEN

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,8,9,13,16-18,20,21,23-39 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,8,13,16-18,20,21,23-27,29-39 and 42-44 is/are rejected.
- 7) ☒ Claim(s) 9 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, the term "a power detector" in the sentence "a power detector, coupled to the directional coupler..." and in the sentence "a power detector, coupled to the filter..." is unclear. It should be rewrite as "a first power detector, coupled to the directional coupler..." "a second power detector, coupled to the filter...."

If the Applicant corrects claim 4, this claim will be allowable since the prior art of record fails to teach a capacitor shunt circuit, coupled to a filter to produce an output signal wherein the output signal of the filter coupled to a second detector to generate a second detector signal.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1-3, 8, 13, 16-18, 23-27, 29-31, 34-39, 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Neill (5,038,112).

Regarding claim 1, O'Neill discloses an apparatus for monitoring a PA coupled to a transmitter (abstract, fig.1), comprising: a detector circuit (# 5, 12,13, 14-15, 16-17), coupled to the transmitter, that generates first and second detector signals corresponding to forward fundamental and reflected harmonic components of a PA output signal produced by the PA; and a comparing circuit (#20), coupled to the detector circuit, that compares the first and second detector signals (18, 19) (column 5 line 43 to column6 line 32).

Regarding claim 8, O'Neill discloses an apparatus for monitoring a PA coupled to a transmitter (abstract, fig.1), comprising: a detector circuit (# 5, 9, 12-13, 14-15, 18-19) that generates first and second detector signal corresponding to forward and reflected power signals, respectively, the detector circuit comprising: a first directional coupler (one of dual directional coupler 5), that coupled the PA and generates a first output signal (#at terminal 10); a first power detector (#14), that generates a first detector signal (#18); a second directional coupled (a second one of the dual directional coupler) that coupled the PA to the antenna and that generates a second output signal (#11); and a second power detector (#15), coupled to the second directional coupler, that generates the second detector signal (#19) from the second output signal, wherein the first output signal corresponds to a forward component and the second output signal corresponds to a reflected component, and a comparing circuit, coupled to the detector

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circuit that compares the first and second detector signals (fig.1, column 5 line 43 to column 6 line 34).

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 1, wherein O'Neill further discloses an antenna (#8 of fig.1), a control circuit (#25) for generating a control signal to control the voltage supplied to the PA depending on the comparison of the different signal V_{diff} in order to control the gain (column 6 lines 32-38) in which a limiter device (#23 of fig.1) is operative to modify the level of the reference voltage generated when the level of the reflected power exceeds a pre-set threshold value (column 6 line 61 to column 7 line 20), which means the control unit controlling a DC bias the PA.

Regarding claim 36, this claim is rejected for the same reason as set forth in claim 1.

Regarding claims 2, 18, 37, 43-44, O'Neill further discloses the comparing circuit generating a different signal (V_{diff}) from comparing the forward and reflected signals that indicates linearity of the PA (column 6 lines 22-48) and comparing the power level of an input signal (V_c) applied to the PA and a DC bias of the PA (modifying the level of reference voltage generated when the level of the reflected signal exceeds the threshold) (fig.1, column 6 line 49 to column 7 line 20).

Regarding claims 3, 24, 38, O'Neill further discloses the detector circuit use a diode and a capacitor to generate the second detecting signal (reflected signal) (column 6 lines 11-21) which means the second detecting signal generated without requiring phase information.

Regarding claims 13, 39, O'Neill discloses the first and second detector signals represent the forward and reflected power signals, respectively which means they represent for the fundamental and harmonic components.

Regarding claims 16, 35, 42, O'Neill discloses the second detector, wherein the second detector inherently generates a plurality of second detector signals since the power level of the reflected signal (for the second detector) is varied depending on the transmission power control in the PA (column 6 lines 49 to column 7 line 20).

Regarding claim 23, the limiting device in O'Neill is a bias control unit since it is operative to modify the power when the reflected power exceeds the pre-set threshold (column 6 line 61 to column 7 line 20).

Regarding claims 25-27, 29-31, 34, O'Neill discloses a first directional coupler coupled to the PA and a first power detector to generate a first output signal, a second directional coupler coupled to the PA and a second detector to generate a second output signal, and wherein the first output signal is a forward power, and wherein the second output signal is a reflected signal (fig.1, column 5 line 43 to column 6 line 48).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill (5,038,112) in view of Pickett et al. (5,196,808).

Regarding claim 20, this claim is rejected for the same reason as set forth in claim 1, wherein O'Neill further discloses an antenna (8 of fig.1), a control unit (25) having a control signal (Vc) to control the PA responsive to comparison of the first and second detector signal (column 22-48). It should be noted that O'Neill disclosing a leveling control circuit for a transmitter (#2 of fig.1) in a cellular telephone (column 4 line 14), wherein the cellular phone inherently includes a baseband processor and a modulator (inherently in a transmitter). However, O'Neill does not specifically disclose how the control unit to connect to a radio section for controlling both the power amplifier and the radio section.

Pickett, in the same type of invention, discloses a control unit (#48 of fig.1) wherein the control unit controls an input signal to the PA wherein the control unit includes a processor for controlling the level power of the PA and controlling the frequency synthesizer for modulating an input signal to control the power output to the PA (fig.1, column 2 line 30 to column 3 line 64). It should be noted that the processor of Pickett is inherently a baseband processor since it is used for modulating the input signal. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have O'Neill, modified by Pickett to process a signal to control the power level of the power amplifier in order to prevent power overload and destruction of the transmission circuitry.

Regarding claim 21, O'Neill further discloses a limiter device (#23 of fig.1) is operative to modify the level of the reference voltage generated when the level of the reflected power exceeds a pres-set threshold value (column 6 line 61 to column 7 line 20), which means the baseband processor in the cellular telephone applying a bias control signal to the PA.

7. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neill (5,038,112) in view of Datz (4,882,547).

Regarding claim 32-33, O'Neill does not specifically disclose the power detector coupled to a filter.

Katz, in the same type of invention, discloses a power detector (30) coupled to an output of a bandpass filter (26) to generate a second detector signal (34) (fig.1). It should be noted that Katz does not specifically disclose a capacitive filter, however, the bandpass filter is capacitively known to those skilled in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have O'Neill, modified by Datz to filter unwanted signal prior to detecting a power signal in order to improve the transmission power control.

Allowable Subject Matter

8. Claims 9, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 9, 28, the prior art of record fail to teach or disclose a third power detector, coupled to the second directional coupler.

Response to Arguments

9. Applicant's arguments with respect to claims 1-4, 8-9, 13, 16-18, 20-21, 23-39, 42-44 have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (703) 308-1116. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

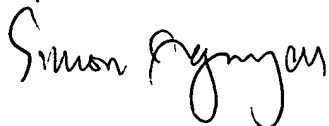
Hand-delivered response should be brought to Crystal Park II,

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2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Simon Nguyen

April 6, 2004

A handwritten signature in black ink that reads "Simon Nguyen". The signature is written in a cursive style with a large, looping "S" and a stylized "N".